MITEL – SIPCoE

Technical
Configuration Notes

Configure the MCD 6.0 for use with the Commend SIP Doorphone

SIP CoE 13-4940-00251

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Mitel Technical Configuration Notes – Configure the MCD for use with the Commend SIP Doorphone

February 2012, 13-4940-00251

Overview

This document provides a reference to Mitel Authorized Solutions Providers for configuring the Mitel 3300 ICP to host the Commend SIP Doorphone. The different devices can be configured in various configurations depending on your VoIP solution. This document covers a basic setup with required option setup.

Interop History

Version	Date	Reason
1	February 27, 2012	Interop with Mitel 3300 12.0.0.49 and Commend SIP Doorphone

Interop Status

The Interop of the Commend SIP Doorphone has been given a Certification status. This device will be included in the SIP CoE Reference Guide. The status the Commend SIP doorphone achieved is:

	The most common certification which means the device/service has been tested and/or validated by the Mitel SIP CoE team. Product support will provide all necessary support related to the interop, but issues unique or specific to the 3rd party will be referred to the 3rd party as appropriate.

Software & Hardware Setup

This was the test setup to generate a basic SIP call between Commend SIP doorphone and the 3300 ICP.

Manufacturer	Variant	Software Version
Mitel	3300 ICP – Mxe Platform	12.0.0.49
Mitel	MBG – Teleworker	V7.1.31.0
Mitel	5330 SIP Sets	SIP (05.02.00.15)
Mitel	5320 IP Sets	Minet (05.02.00.15)
Commend	WS800P SIP Doorphone	Firmware: 3.0 Build: 259
GE	Wireline Analog Set	n/a

Tested Features

This is an overview of the features tested during the Interop test cycle and not a detailed view of the test cases. Please see the SIP Line Side Interoperability Test Pans for detailed test cases.

Feature	Feature Description	Issues
Basic Call	Making and receiving a call	☑
DTMF Signal	Sending DTMF after call setup (i.e. mailbox password)	⚠
Call Hold	Putting a call on hold	N/S
Music-on-Hold	The sounds played to other party which is held	N/S
Call Transfer	Transferring a call to another destination	N/S
Call Forward	Forwarding a call to another destination	N/S
Conference	Conferencing multiple calls together	N/S
Redial	Last Number Redial	N/S
MWI	Message Waiting Indication	N/S
Dynamic Extension	Personal Ring Group configuration	N/S
Resiliency	Basic calls through a Secondary SIP proxy	X
T.38 Fax	Fax Messages	N/S
Video	Video Capabilities	N/S
Teleworker	Mitel remote connectivity with Teleworker	☑

☑ - No issues found X - Issues found, cannot recommend to use ⚠ - Issues found

Resiliency

The following table lists the scenarios of resilience supported by this device when connected to the MCD 6.0 on the 3300 ICP.

Device	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Commend doorphone	X	Not Supported	Not Supported	Not Supported

☑ - No issues found X - Issues found, cannot recommend use ⚠ - Issues found

Note: Refer to list of device limitations and known issues later in the document for recommendations.

The various scenarios are described below. The scenario names are a convenience for understanding this section of the configuration guide.

Scenario 1: Resiliency is achieved by utilizing the ability of DNS servers to provide multiple IP addresses against a single FQDN. This is generally achieved by using DNS SRV or A records. This scenario requires nothing from a SIP Endpoint except that it supports standard DNS behavior.

Scenario 2: The device has inherent knowledge of the primary and secondary 3300 ICPs and will switch between them if a SIP request (**REGISTER**, **INVITE**, or **SUBSCRIBE**) times out. Behavior will be characterized based on whether the device returns to primary ICP and when this occurs. This scenario has some dependency on user action in order to detect a failure, especially if configured with a long registration expiry time, so the chance of a user experiencing a long delay making a call goes up.

Scenario 3: The behavior of the device is the same as that of scenario 2, except that the device will "ping" the currently active server with an **OPTIONS** request. If the **OPTIONS** request times out, the device will switch to the alternate server for all future requests. The intent of this scenario is to provide much faster failure detection by the device. This will allow devices to failover to their alternate ICP much more quickly, and much more unnoticeably. (If the device can detect a failure of the primary ICP, and can failover immediately, the chance that the user even notices a lack of service falls dramatically.)

Scenario 4: The device will support a new SIP header designed specifically for resiliency. The *P-Alternate-Server* header must be included in a **200 OK** or **301 Moved Permanently** response. This header will include data that designates the potential servers and which server the UA must use.

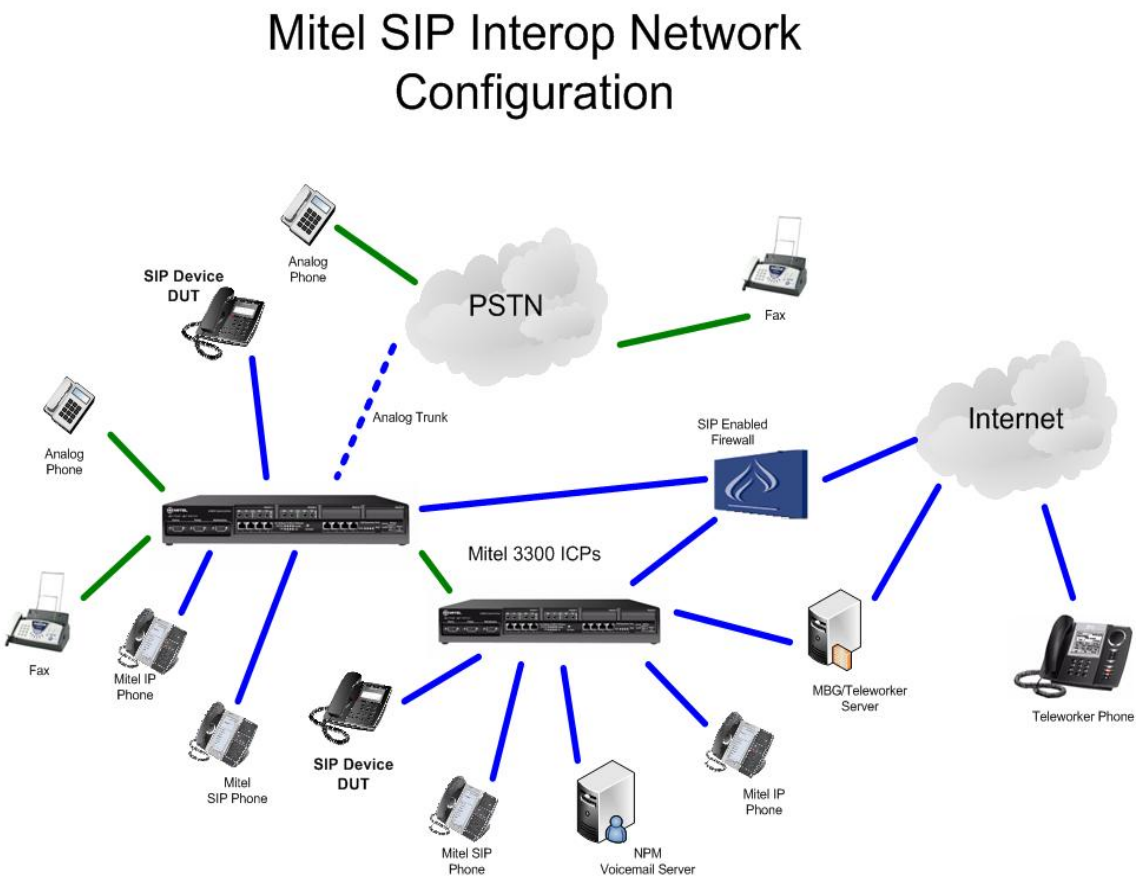
Device Limitations

This is a list of problems or not supported features when the Commend SIP Doorphone is connected to the Mitel 3300 ICP.

Feature	Problem Description
De-registration	Not supported. The Commend SIP Doorphone has no means on the client to de-register. **Recommendation:** Contact your local Commend reseller for further details
All Call Features	The Commend SIP Doorphone has only a single call button to initiate outbound calls to a pre-provisioned DN, and therefore cannot support call features. **Recommendation:** Contact your local Commend reseller for further details
DTMF	For In-Band DTMF on SIP to SIP calls, you could hear the played tones on the Commend SIP Doorphone, but the tones would not activate the door relay. **Recommendation:** use RFC2833
Codec Support	The Commend 8028 does not support G729 **Recommendation:** Use G711 or G722 codec.
Resiliency	Not supported – The Commend Doorphone does not switch to secondary MCD when the primary MCD is not available. **Recommendation:** Contact your local Commend reseller for further details
Miscellaneous	The Commend SIP Doorphone dos not support non-preferred Provisionial Response (PRACK or no PRACK) and did not maintain long calls through Session Timer resets (neither UPDATE nor re-INVITE). **Recommendation:** Contact your local Commend reseller for further details

Network Topology

This diagram shows how the testing network is configured for reference.



Configuration Notes

This section is a description of how the SIP Interop was configured. These notes should give a guideline as to how a device can be configured in a customer environment and how the Commend doorphone was configured in our test environment.

We recommend that the Commend doorphone is configured in Device Based mode. You will configure the Device Based mode in the SIP Device Capabilities Form as described in this section.

Disclaimer: Although Mitel has attempted to setup the interop testing facility as closely as possible to a customer premise environment, implementation setup could be different onsite. YOU MUST EXERCISE YOUR OWN DUE DILIGENCE IN REVIEWING, planning, implementing, and testing a customer configuration.

3300 ICP Configuration Notes

The following steps show how to program a 3300 ICP to connect with the Commend doorphone.

Network Requirements

- There must be adequate bandwidth to support the voice over IP. As a guide, the Ethernet bandwidth is approx 85 Kb/s per G.711 voice session and 29 Kb/s per G.729 voice session (assumes 20ms packetization). As an example, for 20 simultaneous SIP sessions, the Ethernet bandwidth consumption will be approx 1.7 Mb/s for G.711 and 0.6Mb/s. Almost all Enterprise LAN networks can support this level of traffic without any special engineering. Please refer to the 3300 Engineering guidelines for further information.
- For high quality voice, the network connectivity must support a voice-quality grade of service (packet loss <1%, jitter < 30ms, one-way delay < 80ms).

Assumptions for the 3300 ICP Programming

- The SIP signaling connection uses UDP on Port 5060.

Licensing and Option Selection – SIP Licensing

Ensure that the 3300 ICP is equipped with enough IP Users licenses for the connection of SIP end points. This can be verified within the License and Option Selection form. See Figure 1.

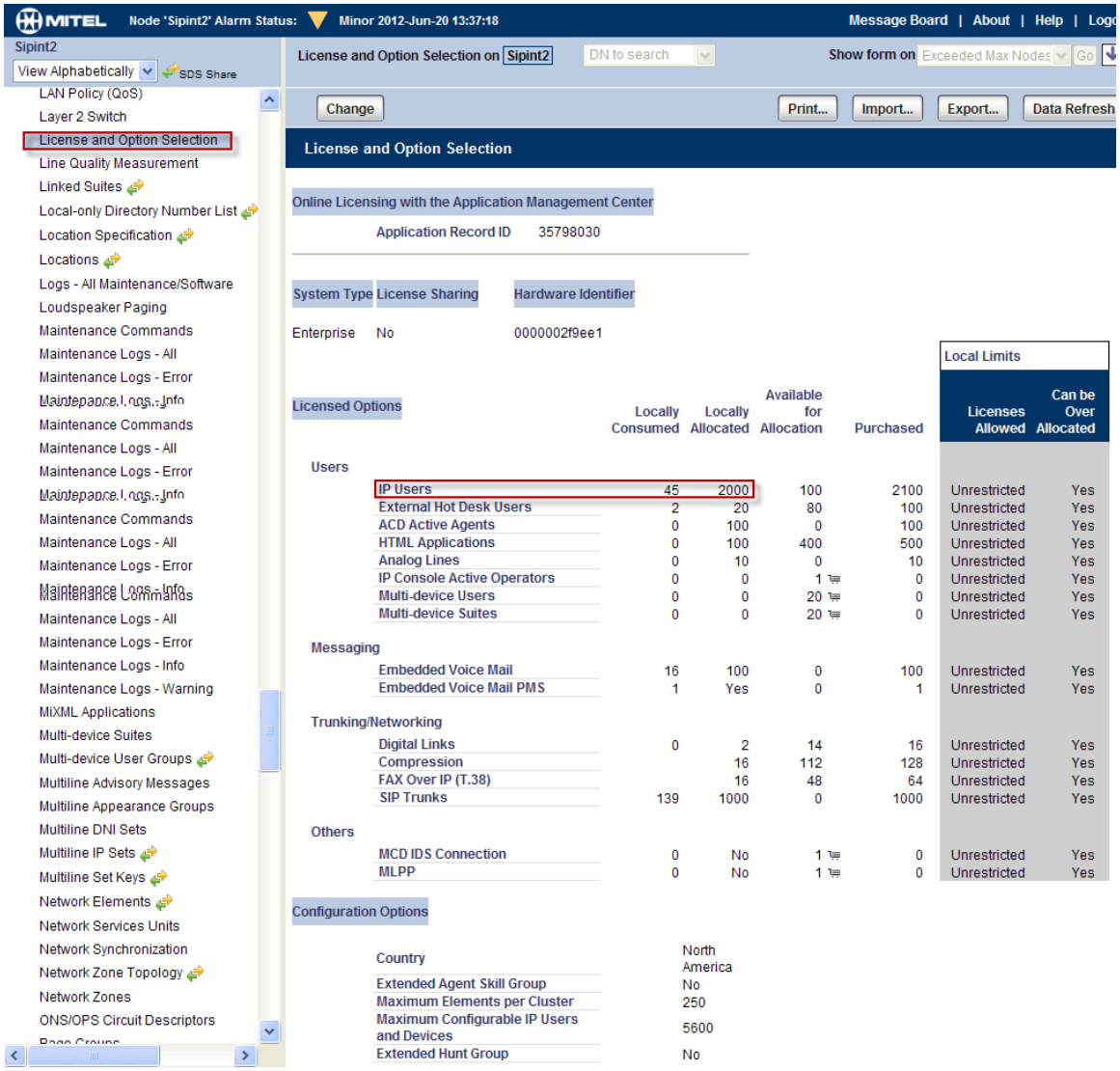


Figure 1 – License and Option Selection

Multiline IP Set Configuration

On the Mitel 3300 ICP, a SIP device can be programmed either in the User Configuration form or the Multiline IP Set Configuration form and are programmed as a “Generic SIP Phone”. Enterprise Manager can also be used to provision where this application is installed.

The User PIN is the SIP authentication password and the Number is the Directory Number (DN is a telephone number). The Number and User PIN must match the information in the Commend doorphone’s settings. All other field names should be programmed according to the site requirements or left at default. See an example in Figure 2.

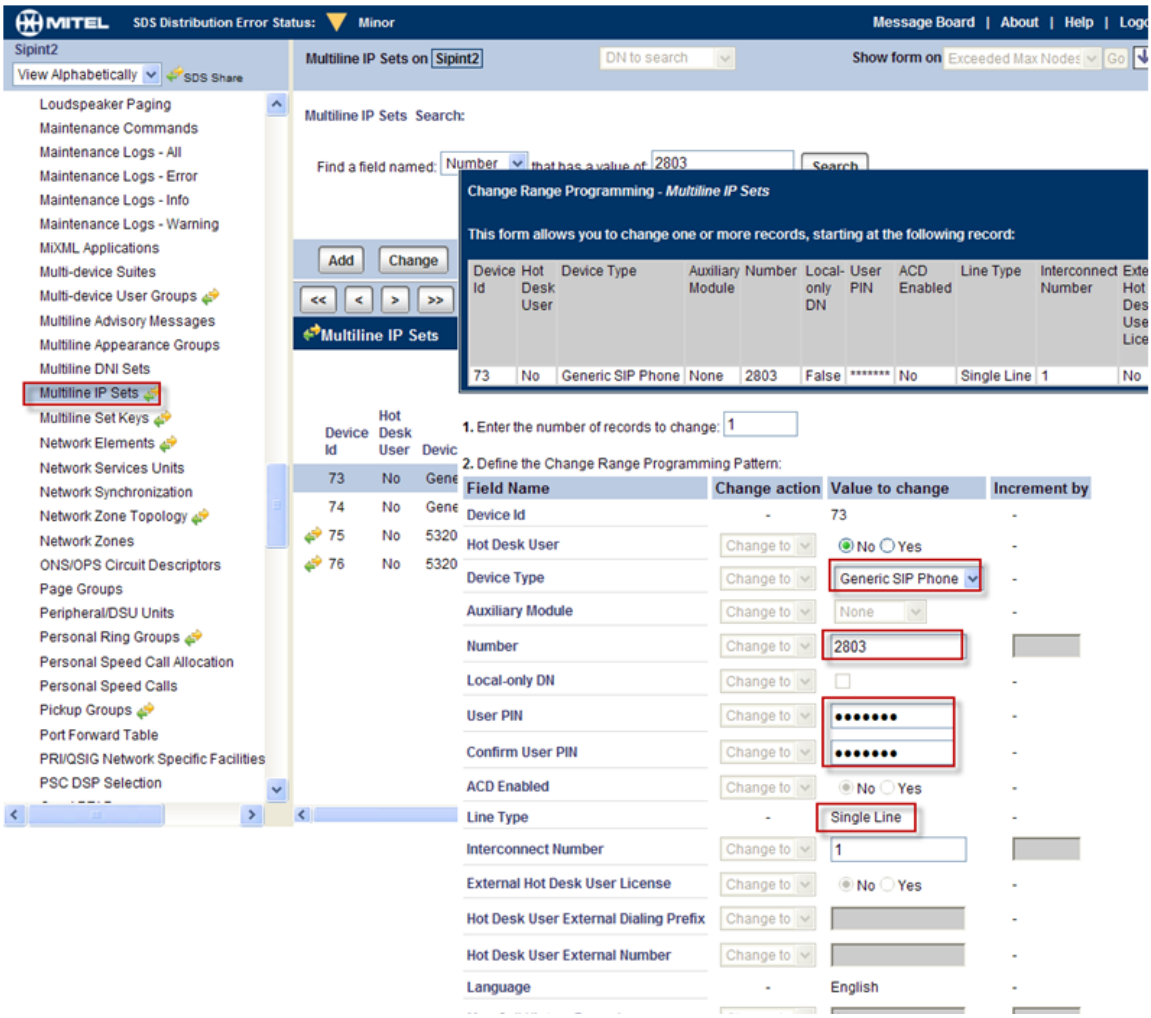


Figure 2 – Multiline IP Set Configuration

Class of Service Assignment

The Class of Service Options form is used to create or edit the Class of Service and specify its options. Classes of Service, identified by Class of Service numbers, are referenced by the Station Attributes form for the SIP device.

Many different options may be required for your site deployment, but the options below are required to be changed from the default for a Generic SIP Device to work with the 3300 ICP. (See example in Figure 3)

Under General tab:

Navigate to section Campon and ensure:

- Auto Campon Timer is **blanked (no value)**

Navigate to section HCI and ensure:

- HCI/CTI/TAPI Call Control Allowed set to **Yes**
- HCI/CTI/TAPI Monitor Allowed set to **Yes**

Navigate to section Trunk and ensure:

- Public Network Access via DPNSS set to **Yes**

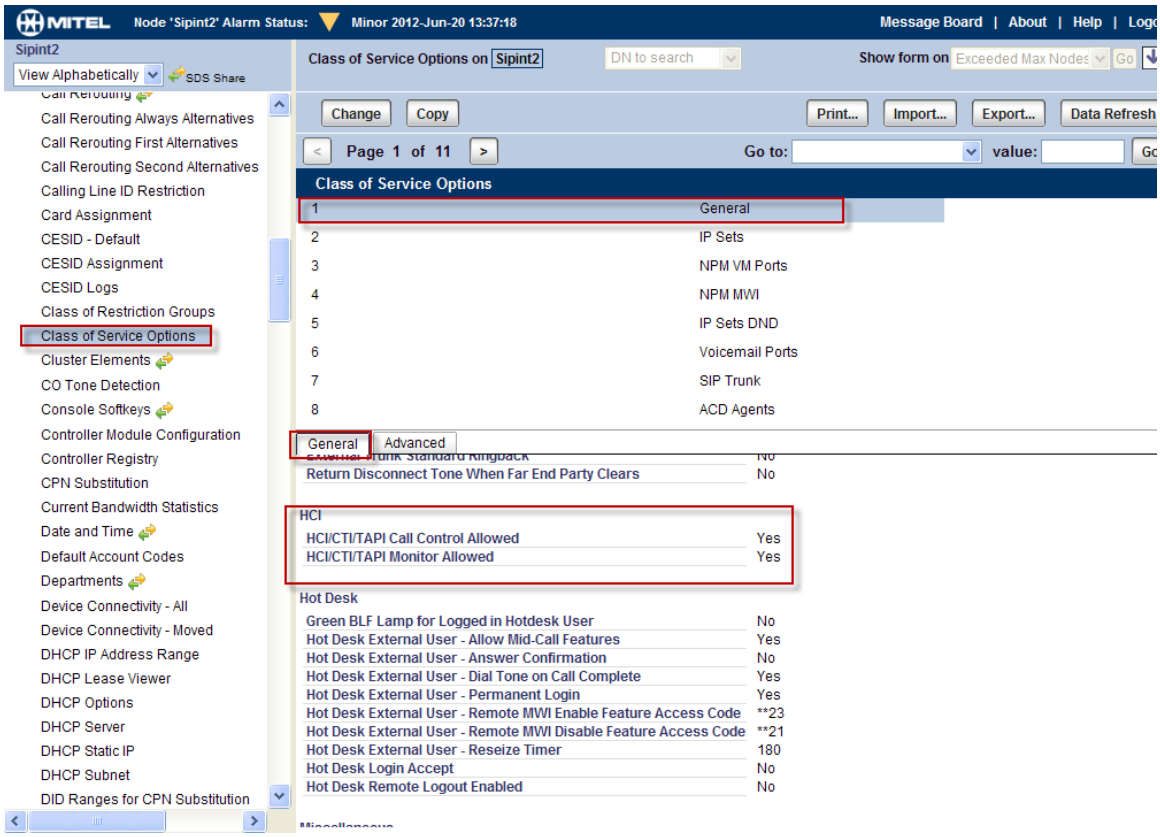


Figure 3 – Class of Service

SIP Device Capabilities

This form provides configuration options that can be applied to various types of SIP devices. The association between the SIP device and the form is similar to how the Class of Service options work. The SIP Device Capabilities number provides a SIP profile that can be applied to particular SIP devices to allow for alternate capabilities as recommended through the Mitel interop process.

In the SIP Device Capabilities form, program a SIP Device Capabilities Number for the Commend doorphone. Ensure that “Enable Digit Collection in Busy Or Alerting State” is set to ‘**Yes**’.

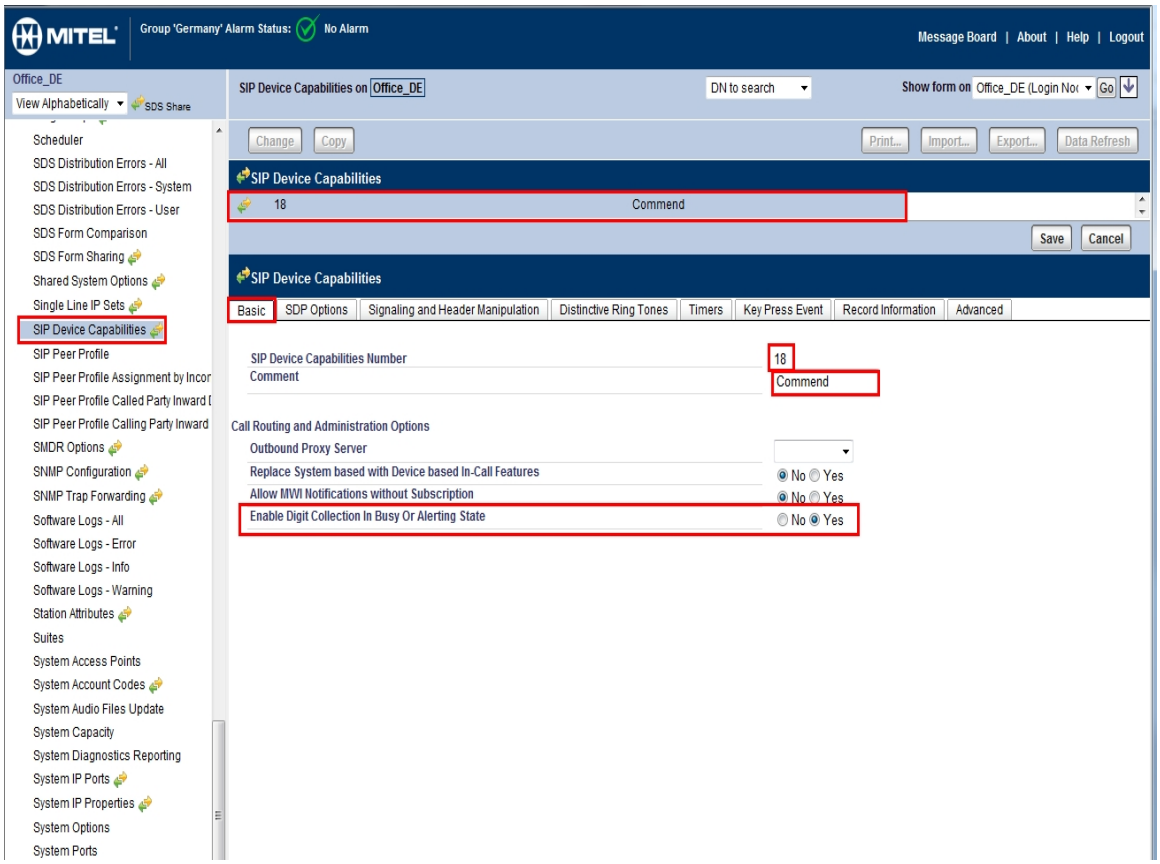


Figure 4 – SIP Device Capabilities - Basic

Settings for the Timers are important part for the SIP devices configuration.
Set Registration Period, Subscription Period and Session Timer according to the site requirements. Ensure that the time periods for Registration and Subscription are matching those configured in Commend doorphone. See an example in Figure 5.

The settings on all other tabs of SIP Device Capabilities form remain unchanged, at their default values.

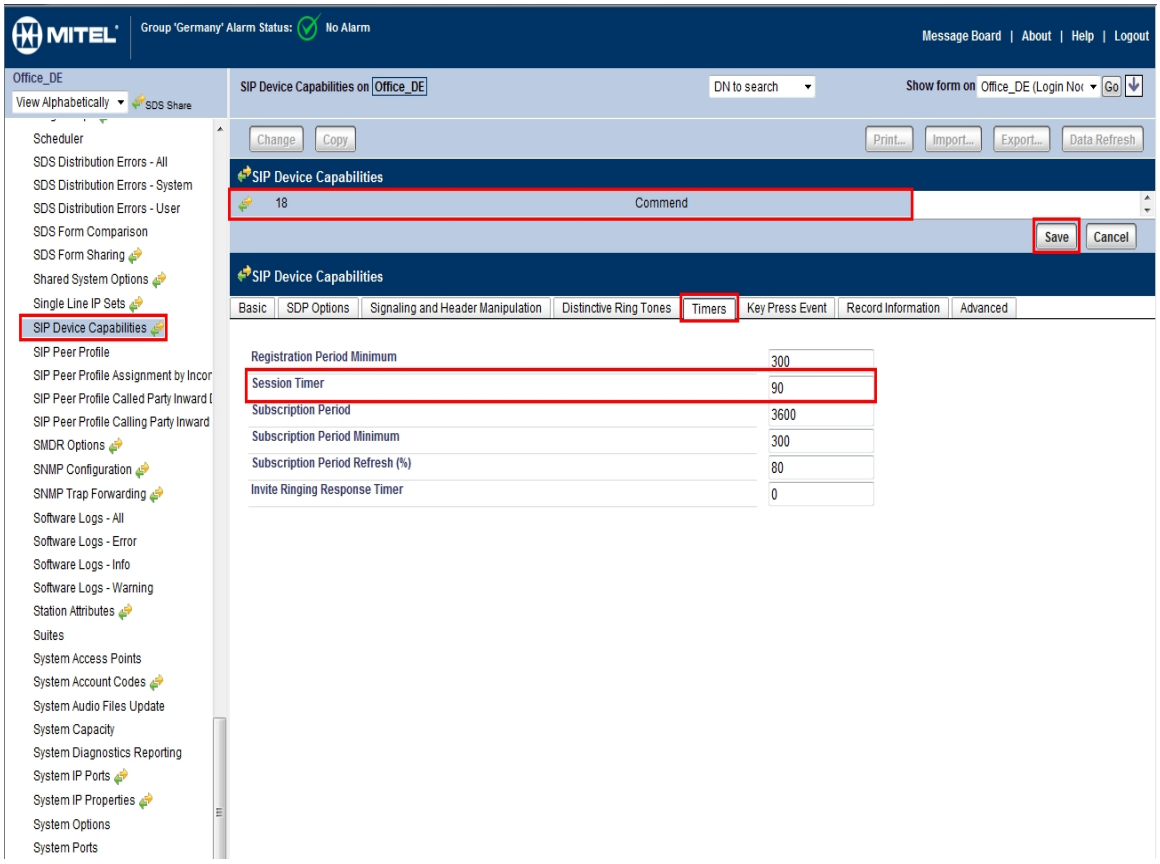


Figure 5 – SIP Device Capabilities – Timers

Station Attributes

Use the Station Attributes form to assign the previously configured Class of Service and SIP Device Capability number to each of the Commend doorphones in the 3300 ICP. This form utilizes Range Programming.

Select the Commend doorphone device number then select Change. Enter the previously configured SIP Device Capability number and Class of Service for Day, Night 1 & Night 2. See an example in Figure 6 below.

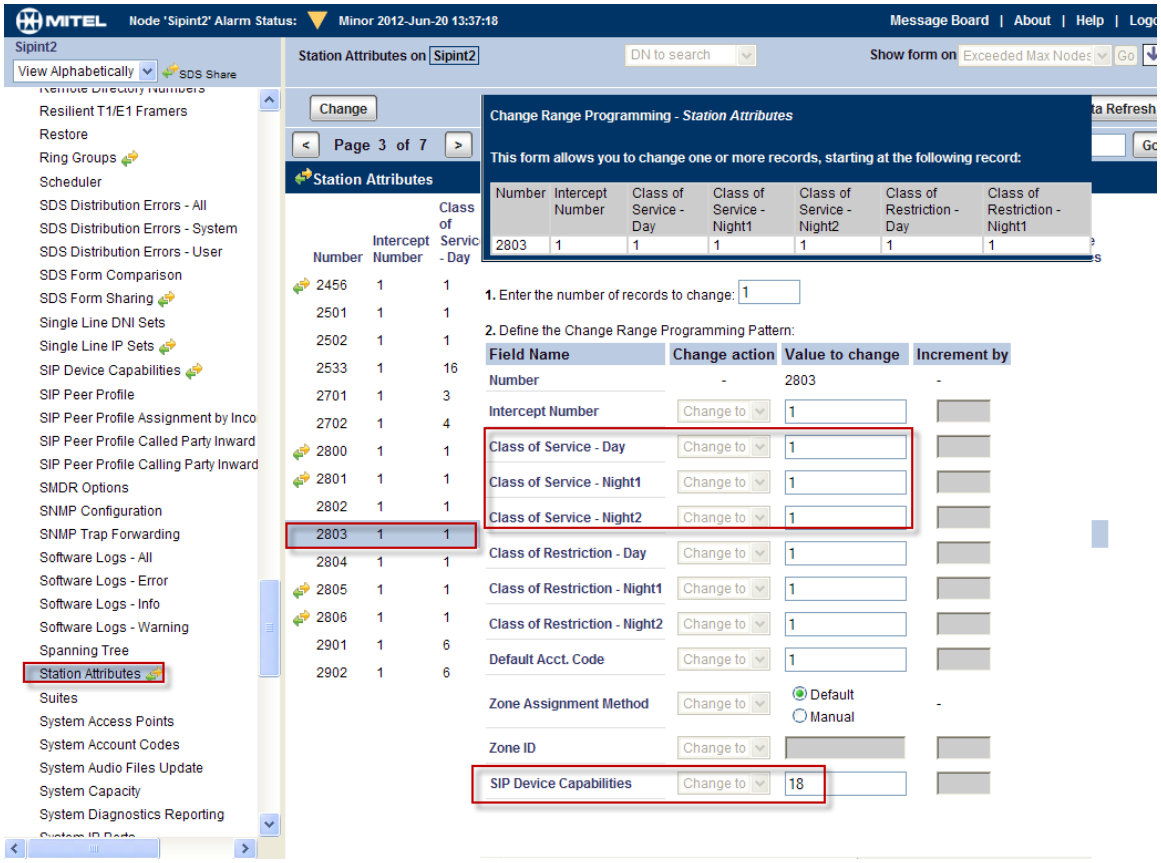


Figure 6 – Station Attributes

Commend doorphone Configuration Notes

The following steps show how to program the Commend doorphone to interconnect with the 3300ICP.

The configuration settings below are the main reference points and by any means could not be considered as the comprehensive configuration instructions.

We strongly recommend contacting the phones' manufacturer Commend International GmbH website http://www.commend.com/sip for more detailed instructions and manuals.

Accessing Commend Doorphone

In our test environment, we configured Commend doorphone through the web interface.

The SIP stations are delivered ex works with a standard IP address, via which the web interface of the station can be accessed:

☐ IP address **192.168.1.200**

☐ Subnet mask **255.255.255.0**

If the station can not be used in the local network (LAN) with this IP address, then the following procedure is recommended:

☐ Establish connection between PC and SIP station via a hub (or switch) or via a direct connection cable.

☐ The PC must be in the same subnet as the SIP station.

☐ This means, an appropriate IP address of that subnet range (e.g. 192.168.1.199) has to be allocated to the PC temporarily.

Note: When connecting the SIP station with this IP-address to the local network (LAN), it is essential to make sure that this IP-address does not already exist in the network! Take a note of IP address assigned to the phone, e.g. 192.168.101.131.

After entering the IP address, a login dialogue appears where following data has to be entered:

☐ User name →factory default: **admin**

☐ Password → factory default: **commend**

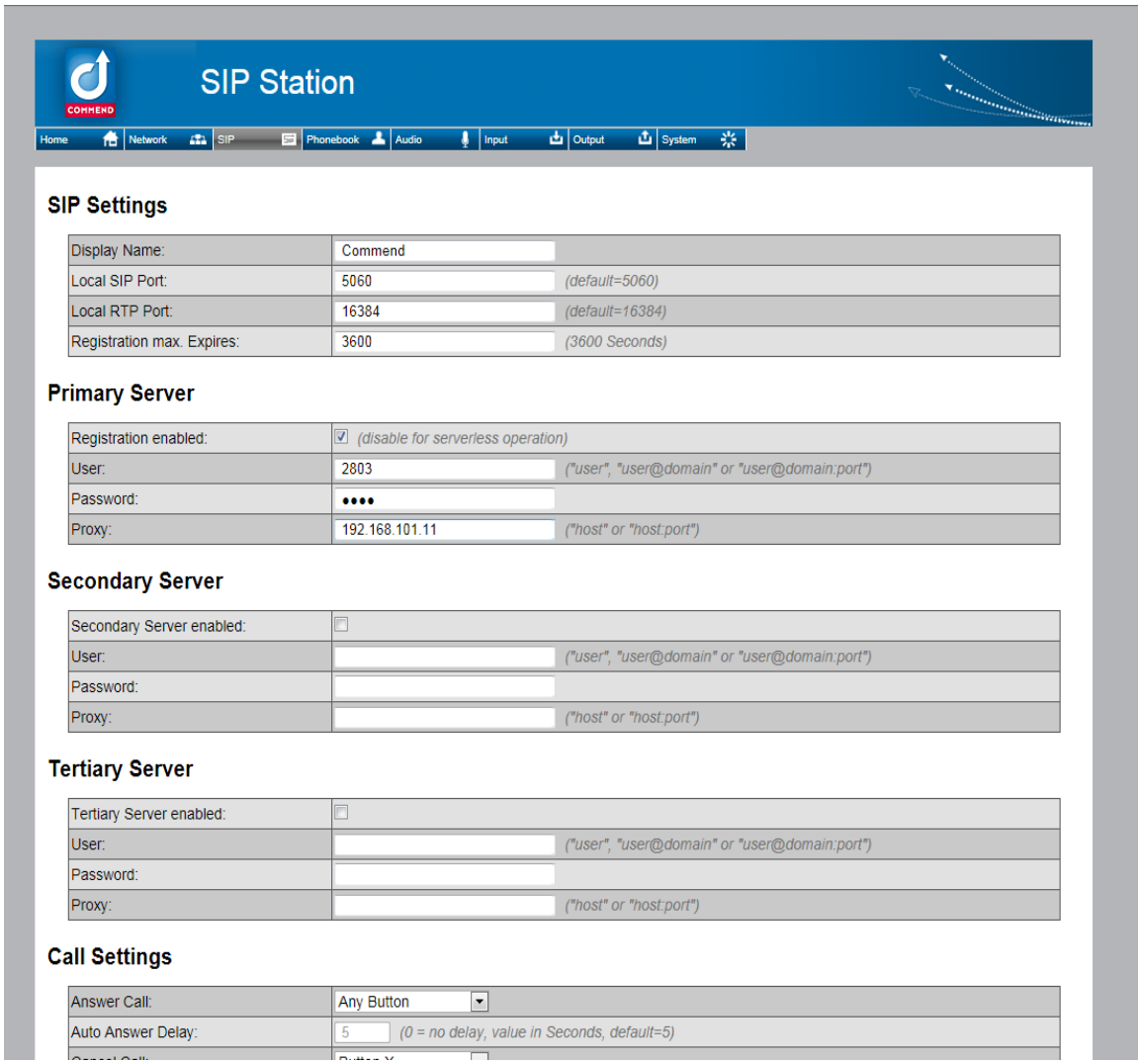


Figure 7 – Commend SIP Doorphone

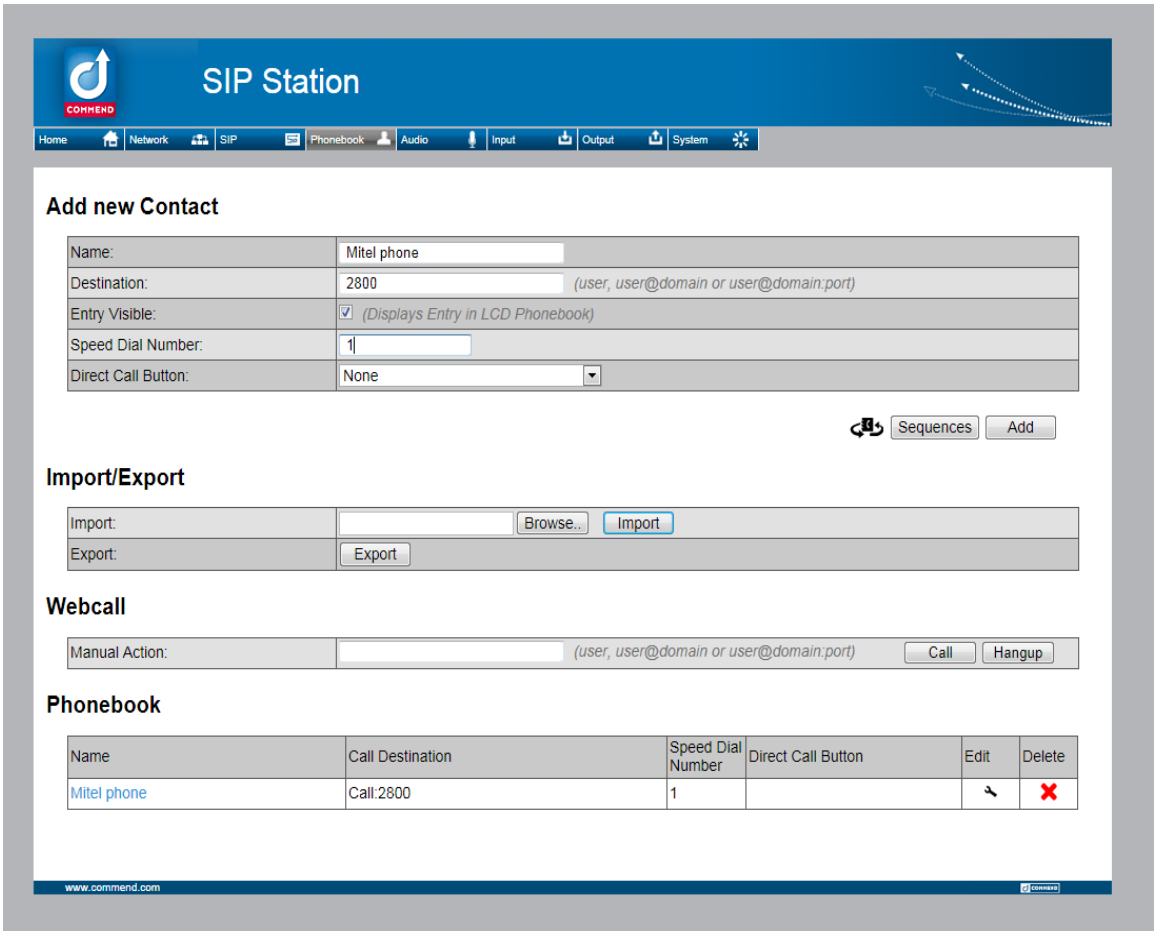


Figure 8 – Initial Configuration

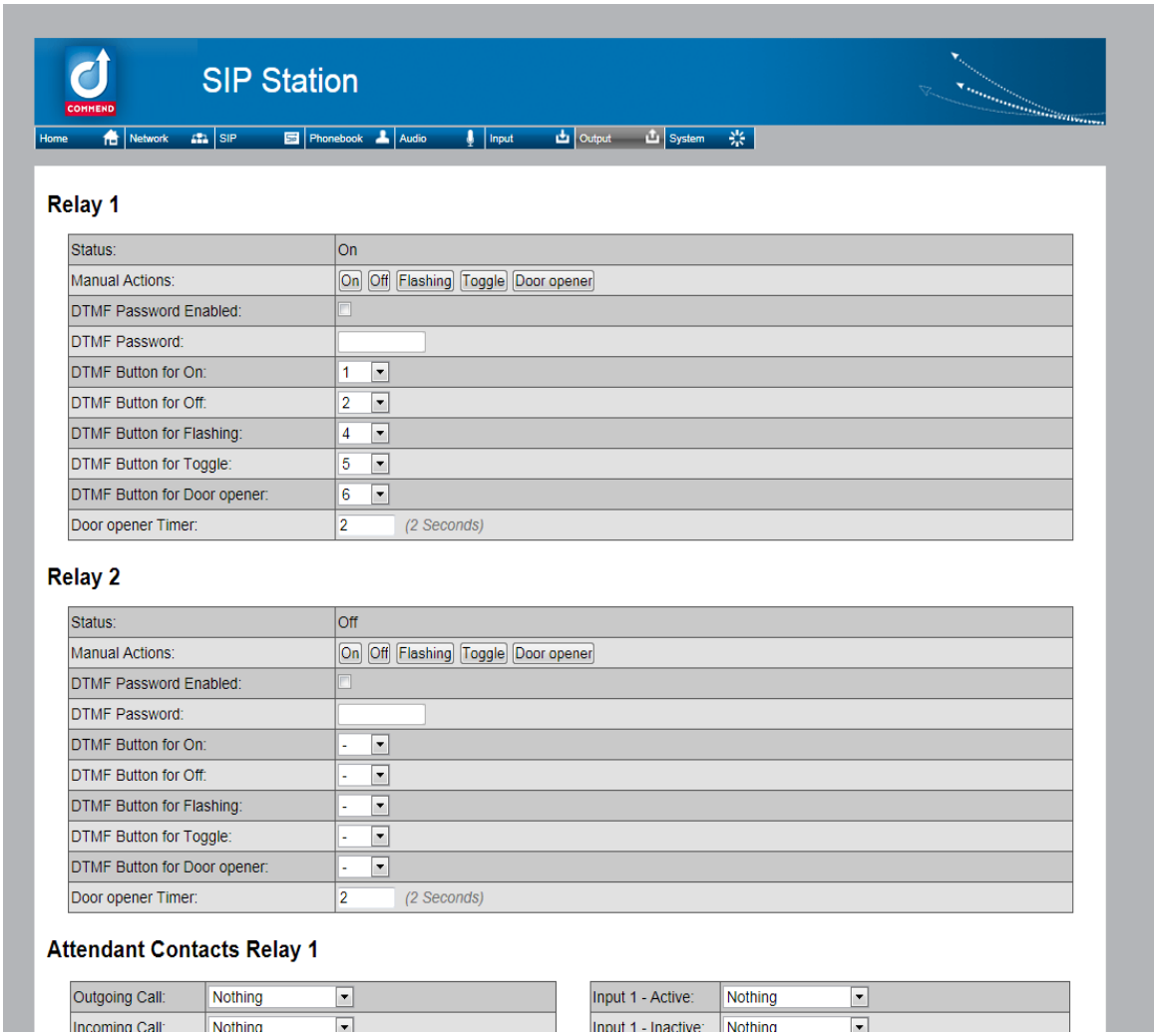


Figure 9 – Initial Configuration

Mitel Resiliency Configurations

Resiliency behavior tested as in **Scenario 1**, configure the parameter for Domain server as shown in Figure 11.

In this example,

sipint4sipint2 is the FQDN name of the primary 192.168.101.11 SIP Proxy (3300 ICP) using DNS SRV or A records to get the secondary 192.168.101.20 (i.e. Alternative) SIP proxy (3300 ICP).

NOTE: Before configuring this parameter, make sure that DNS server correctly resolves the names of the SIP proxy to IP addresses! The order, in which the SIP proxies IP addresses are resolved, is also important! To check it, use the command in command shell:

nslookup sipint4sipint2.sipcoe.mitel.com

Server: ad-sip-interop.sipcoe.mitel.com

Address: 192.168.101.200

Name: sipint4sipint2.sipcoe.mitel.com

Addresses: 192.168.101.11, 192.168.101.20

In this example, **192.168.101.11** is the IP address of primary SIP Proxy (3300 ICP) and **192.168.101.20** is the IP address of the secondary (i.e. Alternative) SIP proxy (3300 ICP).

NOTE: Although FQDNs could be set for the primary and secondary PBXs' addresses, we recommend using of IP addresses. The site's DNS server can be inaccessible in case of the network failure. That's why, for better reliability, the use of IP addresses is more preferable.

Do not forget to click Apply to submit the settings to Commend doorphone to force the phone to reset and load new settings.

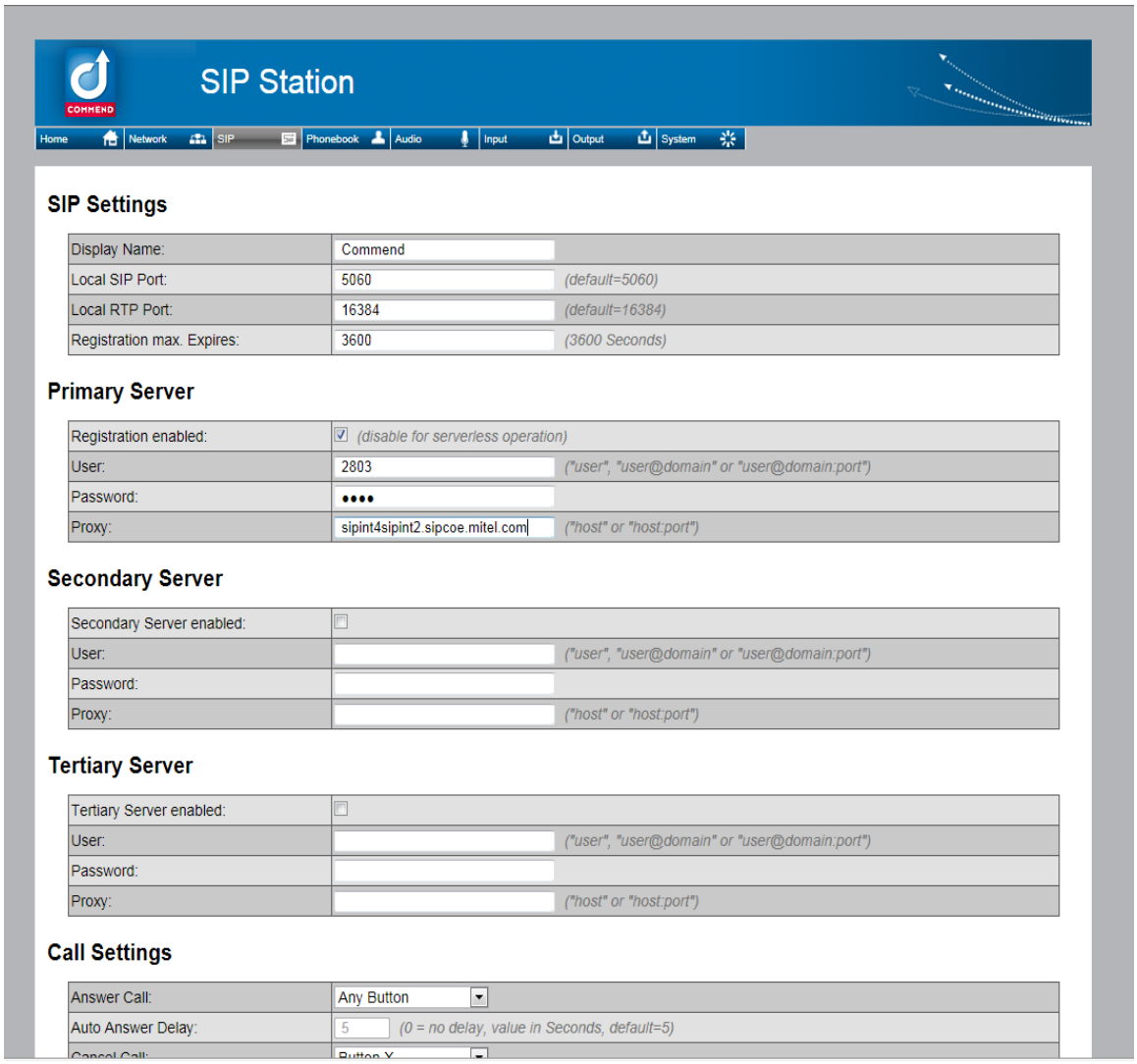


Figure 10 – Scenario 1 resiliency

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